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## Poetry.

### THE TELEGRAPH.

He who created heaven and earth,
And gave the rolling thunder birth,
Who hold'st the ocean in his hand,
Whose waves are stayed at his command,
Who made the gorgeous sun to gild
The humblest cot that man can build,
Who strewed the earth with lovely flowers,
And gave to man gigantic powers,
Hath kindly unto Morse revealed
What heretofore had been concealed.
He doth the rapid lightning tame—
A Telegraph he calls its name—
And with a single vivid flash,
A dot—a space—a line—a dash—
Can send around the earth the news,
Or stop it, just as he may choose,
What a mysterious mighty power!
No noise is heard—no cloud doth lower,
And yet the lightning wings its way,
And tells whate'er we have to say.

### MEMORY OF THE PAST.

When backward through departed years
On memory's wing we stray,
How oft we find a source of tears
Along that wasted way!
The heart will vainly seek the light
That rested there before.
And sadly turn to mourn the blight
Of all it loved of yore.

We watched for footsteps that once came
To breathe the twilight vow—
We listen for the silvery tone
Of voices silent now;
We gaze on old, familiar things,
And marvel that they bear
No gladness to our spirits wings
Like that which once was there.

### FANNY FORESTER'S BIRD.

Ere last years moon had left the sky,
A birdling sought my Indian nest,
And folded—oh, so lovingly—
Her tiny wings upon my breast,

From morn till evenings purple tinge,
In winsome helplessness she lies,
Two rose-leaves with a siken fringe,
Shut softly on her starry eyes.

There's not in Ind a lovelier bird;
Broad earth owns not a happier nest—
Oh God, Thou hast a fountain stirred,
Whose waters never more shall rest.

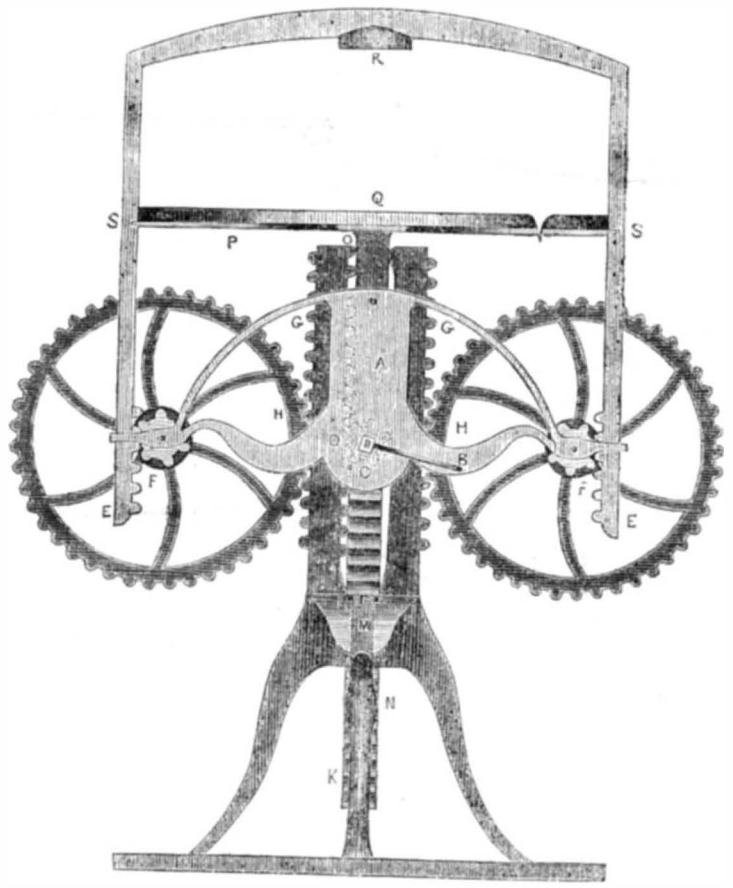
This beautiful mysterious thing,
This seeming visitant from Heaven,
This bird with the immortal wing,
To me—to me, Thy hand has given.

The pulse first caught its tiny stroke,
The blood its crimson hue from mine;
This life which I have dared invoke,
Henceforth is parallel with thine.

A silent awe is in my room—
I tremble with delicious fear,
The future with its light and gloom,—
Time and eternity are here.

Doubts—hopes, in eager tumult rise,
Hear, oh, my God? one earnest prayer:
Room for my bird in Paradise,
And give her angel plumage there.

## IRA CARTER'S CHEESE PRESS.




This is a very neat and novel invention of a Cheese Press invented by Ira Carter, jr. of Plattsburg, Clinton County, N Y. The principle of the invention consists in applying the weight of what may be called "the lifting gear," to press the cheese by direct lever pressure and in such a manner downwards that as the cheese curd is compressed the lever will accommodate its pressure to the same.

EXPLANATION.—N, is a strong cast iron frame with four legs of the form represented in the cut or of any other form for simplicity and solidity. Attached to this are two upright rack standards G G, these are bolted to the pedestal or base and are stationary—all the other parts are moveable. K, is a platform of the cheese table Q, and to which the cheese table is firmly fixed by bolts. This platform and rack standards are quite thin in proportion to their length and breadth. A, represents a broad iron plate or bearing which forms arms for the gudgeons of the rack wheels H H, and the pinions F F, which are cast on the hubs of the said rack wheels. This bearing is bolted to the platform K, and an axle with a pinion C, on the interior part of it working into an interior rack D, seen by the dotted lines, is operated by a handle B, whereby the said pinion C, by biting into the rack D, carries up on the rack standard or towards the top of the frame, the whole moveable gearing.—When the platform is thus lifted up and the cheese table elevated, a small spring wedge marked L, is inserted into the wedge rack of the platform and held firm by a small butt M. E E, is a double cross head lever with racks cut on the inside near the extremities. These racks are for the purpose of pinions F F, working into when as the platform is raised so that the lever will be raised at the same time. The pinions on the arms are larger than C, the main or interior pinion, so that when the platform is lifted the lever will move up faster and vice versa. The cheese is put upon the cheese table between Q and R, when at the highest elevation and the cheese table lowered, the whole weight of the wheels acting upon the extremities of the lever as a pressing power, and the space between R and Q, diminishing as the cheese is compressed. This is owing to the pinions F F, being larger than the main pinion C; were it not for this no pressure would be expected by the operation. The relative proportions of these pinions should be at least a third in circumference, the interior one being that much less. S S, are two clasps on the under part of the cheese table to guide the arms of the lever and make them firm, and the arms of the lever are also clasped by the bearing plate. The cheese table is round, the form of a shield, and it is bolted to the platform or moveable rack, by a strong plate running across to the arms of the lever, and designated by the letters O P.

Measures have been taken to secure a patent for this Press, which will answer for more purposes than making cheese. As a small press it is preferable perhaps to many others in use for pressing small packages, as the turning of the handle presses or relieves the pressure, thereby causing but little trouble in putting in and taking out a package.

### The New Star.

The new star, says the London Literary Gazette, observed by Mr. Hind in the constellation of the Serpent, occupies the attention and interest of astronomers. It continues of the same brilliancy of the fourth magnitude, and exactly in the same position, within the triangle formed by the three stars, zeta and eta Serpentarius, and nu of the Serpent. Recently Mr. Hind has noticed singular changes of color, red and blue or green and yellow tints. When the star is near the horizon, its color is yellow, deepened with sudden flushes of red light. Its appearance is stated to be certainly different from that of any other star. It is supposed to be the lost star of Flamstead, observed by him in 1690, which, however, was of the sixth magnitude.

The Earle of Rosse, an Irish nobleman, the constructor of the Leviathan Reflecting Telescope, is to be the new President of the Royal Society, in place of the Marquis of Northampton, who retires.

### RAIL ROAD NEWS.

The Lowell and Lawrence Railroad, Mass. is to be completed by the first of July, and the fare to be thirty cents between the two cities.

A thousand laborers, and a large number of masons are wanted on the Pennsylvania Railroad Good wages are given, and prompt payment in good funds. Work can be had on the road for several years.

The first locomotive that ever travelled in Vermont, appeared there on the fifth inst. It is supposed to be a swifter horse than the famous Morgan breed.

In 1847, Massachusetts expended for 698 miles of railway, $34,461,513, which in the aggregate paid a net income of 7.71 per cent, and transported a tonnage of 1,769,332 tons.

### French Railways.

We are afraid that the French Railways are in a bad condition, as we have seen accounts of materials sent back to England that had been sent to France for the construction of some of the main lines. A vessel recently brought back from Bologne to London 57 wagons, 114 pair of wheels, 3 brakes and a number of other railroad articles. We hope that France will not neglect her internal improvements in the midst of her revolutionary excitement.

### Plank Road.

The Central Square and Pine Plank Road, is a work undertaken by the enterprising citizens of the territory bordering on Oneida Lake, and in a fair way to be carried through to completion. This road, when completed, will extend from Central Square, in the county of Oswego, (near the west end of Oneida Lake,) to Pine, on the Rome and Oswego Plank Road, ten miles from Rome, passing through Constantia, Cleveland, West Vienna, North Bay, and Vienna. A sufficient amount of stock is taken to build all but ten miles of the road. The plank are now being laid, and will before next autumn be completed from Central Square to West Vienna.

From Central Square to Syracuse, a plank road is already in use, and when the Central Square and Pine road is completed, we shall have a continuous road from Rome to Syracuse, on the North side of the Lake, a distance of some 53 miles. The scenery along the lake shore in the summer season is delightful, and the plank road will furnish a charming ride over this hitherto comparatively unfrequented route,

### Salmon of Oregon.

Lieut. Howison, of the U. S. Navy, in his report on Oregon, states, that the Salmon enter the mouth of the Columbia in May, and make their way up the stream for the distance of twelve hundred miles, being found in the month of September, at the very sources of the Columbia. The young fry pass out to sea in October, when they are nearly as large as herring. Different families of salmon resort to different rivers, which empty into the Pacific on the North-west coast. The largest enter the Columbia, coming from the north. They average twenty pounds each, and some weigh forty pounds.

These fish constitute the chief subsistence of many thousand Indians, who reside in the country watered by the Columbia, and its tributaries, and besides affording an abundant supply to all those and the white settlers of Oregon, eight hundred barrels a year are exported.

M. Argo has estimated that about seven millions of comets frequent the solar system, which, says a writer in Frazer, fully accounts for the number annually discovered.

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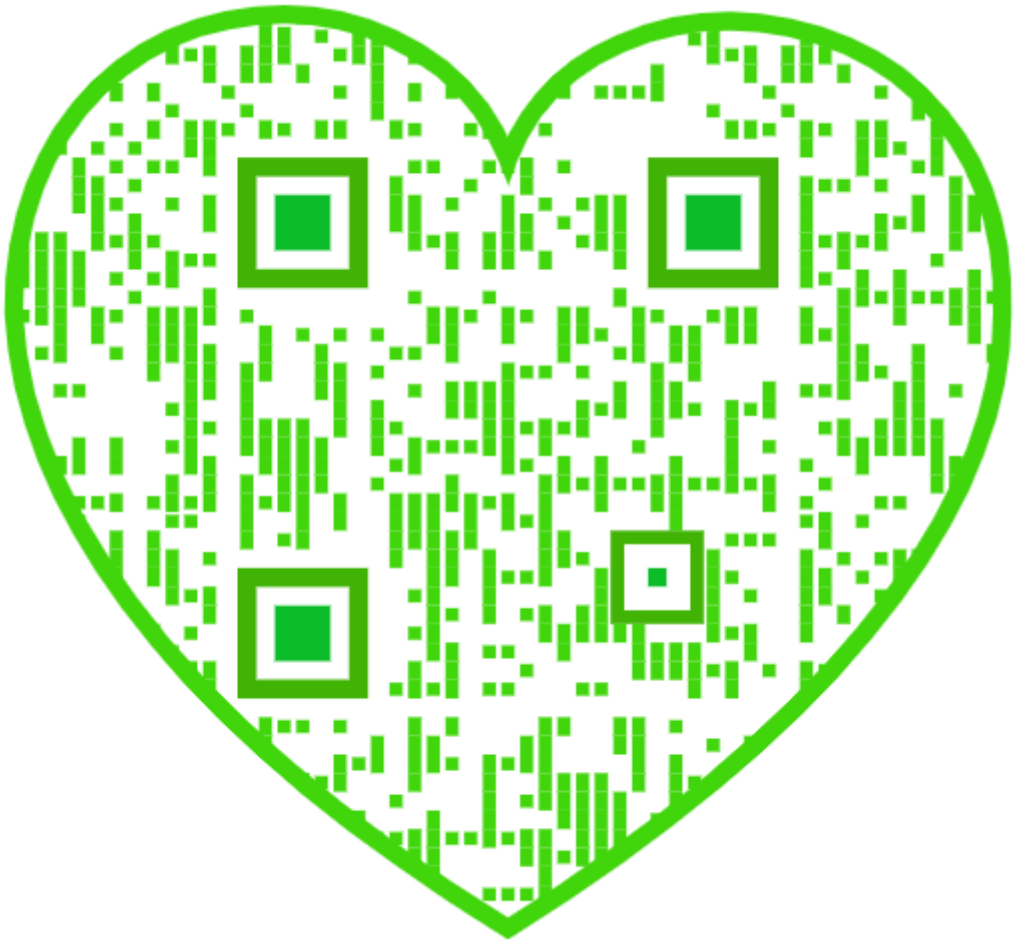

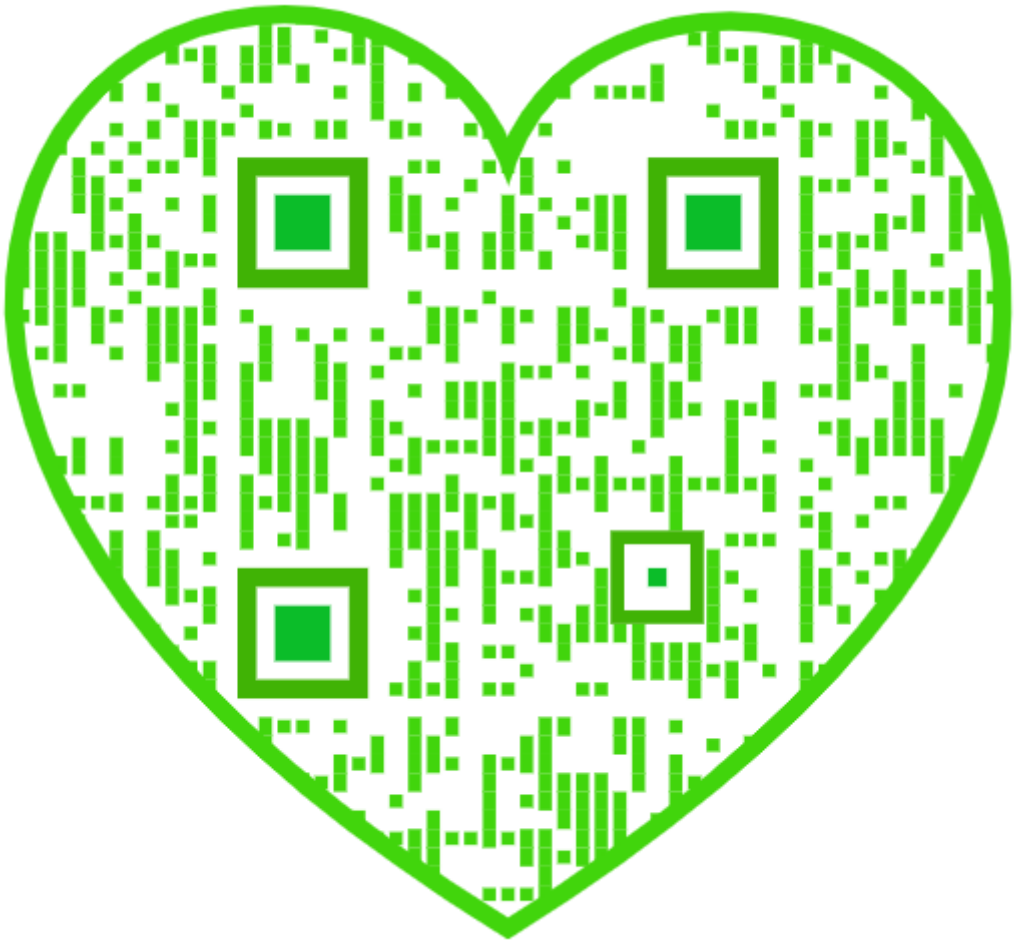

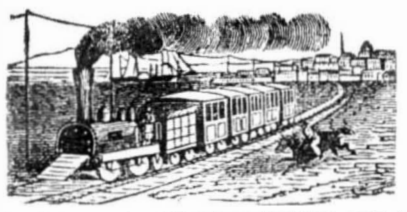

### Late from Europe.

By the Britannia we learn that Ireland is not yet ready to strike the blow—Mr. Meagher now says this. John Mitchell seems to have been the only hero among the Repeal leaders, and he was allowed to be driven away,

——"banished forlorn,
Like a limb, from his country
All bleeding and torn."

His brother came out in the Britannia to this city.

The Italians have beaten the Austrians in a severe engagement—one King knocking down another. There is a prospect of peace between Denmark and Prussia. The crops in England look well. France is still disquieted and it is reported that Prince de Joinville has been taken prisoner incog. in Paris. France will it is supposed, yet relapse into the arms of monarchy. With all the noise lately made in Europe, there is but one crowned head the less—only one vacant throne. There is every appearance of Spain and England coming to blows. This is a prelude to the conquest of Cuba—let us see if this be so, or not.

### Boston Water Works.

The laying of the iron pipes and masonry for the introduction of the water from the lake near Framingham, Mass. into Boston, distance 22 miles, are nearly finished and the work will all soon be completed. The *Draw* of the South Boston Bridge was avoided in the following manner: Conducting pipes were laid along on both ends of the bridge until they reached the two edges of the draw: here they were joined in the shape of the letter U, firmly boxed in wood, and the whole mass was then sunk into the mud under the channel.—The upright ends of the U were then fastened into the pipes on each side of the draw, affording a complete submarine passage for the water without the least obstruction to navigation.

### Rapid Motion.

The trip from Cincinnati to Albany, by the way of Buffalo, we see it stated, has been made in three and a half days. On a par with this, it is announced that the regular passenger trains on the Providence, Taunton and New Bedford railroad, make the run from Boston to Taunton daily, a distance of thirty-five miles, in one hour and fifteen minutes, and the trains from Boston and New Bedford, fifty four miles, make the run in two hours, including the delays at the usual stopping places. If the distance travelled on either of the routes from Philadelphia to New York and to Baltimore was performed at the same rate of speed, as we see no reason why it might not be, the time at which those cities would be removed from each other would be reduced to about three hours, or little more than half the time at present consumed in overcoming the hundred miles. We can see no good reason why the trip may not be made from this city to Buffalo in 10 hours when the Erie Railroad is opened.

### A Splendid Car.

The Philadelphia, Wilmington, and Baltimore Railroad Company have placed on their road another splendid passenger car, being the third of a class of new cars which the company is now having built. This car is 50 feet long, by 8 feet 8 inches wide, and built to accomodate 54 passengers. Previously cars one-third shorter were built to carry 60 passengers; from this it is easy to imagine the ample space afforded in the new class car. It contains a ladies apartment, which is entirely private, and provided with a sofa, mirrors and every convenience necessary. The seats and sofas are of crimson velvet, with spring seats made in a manner to afford the greatest ease.

### Saw Setter.

Mr. J. Tall, an English mechanic, has invented a beautiful and cheap instrument for setting saws, and for which he has secured a patent.

### Smithsonian Institute.

The length of the Smithsonian Institute is four hundred and fifty feet. Its breadth at the towers is one hundred and fifty feet; its general breadth fifty-four feet. The Eastern wing will first be finished and put in order for the occupation of the secretary, and for the immediate purpose of the board. When finished it will indeed be a very unique and beautiful edifice, worthy of the dignity of antiquity, and of the enlightened liberality of its founder. If there be no simplicity in the architecture, it is to be hoped that valuable quality will be studied in all the practical arrangements of the establishment. We hear that Prof. Henry has fully resigned his office in Princeton College, and is now entirely devoted to the work.

### Naturalization Laws.

Congress has passed a most important amendment to our naturalization laws. It requires five years to elapse before any one can be naturalized after having declared their intentions to become citizens; but during that time, if they cross into Canada, or leave the United States on any temporary object, they forfeit all that time. This is changed. They may now leave the country for any temporary purpose, without forfeiting any of their rights.

### Haunted House.

A "haunted house," in New Orleans has lately been sold for $100,000 It is cheap at that, for it is said to be economically illuminated every night, with balls of blue fire, making gas or lamp-light unnecessary. Besides there is a pleasing performance in the dancing room, twice a week—a dance of juvenile demons, with rich, horrific accompaniments; no charge made by the performers, and no hat handed around for a voluntary contribution. Truly a valuable piece of property.

### Great Criminality.

The telegraph wire which was laid a short time ago across the river to Jersey City in gutta percha tubes, was taken up last week by some wretch who had neither the fear of God nor man before his eyes. The tube was drawn out of the water a short distance from Jersey City, the gutta percha tube hacked with a sharp instrument and the wire twisted and broken. The wire is to be relaid in a thicker coating of the gutta percha so as to insulate and protect it more completely.

### A Political Nail.

A Yankee has invented a new kind of nail, warranted to fasten political lies to the counter perfectly secure. It will be impossible to manufacture enough to answer the demand.

The above paragraph is undoubtedly a mistake, as such *nails* are totally unsaleable.—A machine to make the lies and shove them along on *the counter*, by turning a crank, would undoubtedly be in demand and soon make handsome profits, but our Yankee friends are not quite so good at making such kind of machines as the inhabitants of some other regions.

### Getting Rich.

Rev. Mr. Cecil said to one of his parishioners, who had previously asked for counsel, and whom he had not seen for some time, "I understand you are very dangerously situated." "I am not aware of it," was the reply. "I hear you are getting rich," said Mr. Cecil: "take care, for it is the very road by which the devil leads thousands to destruction."

### To Plant Chesnuts.

The nuts must not be suffered to become dry. Plant them in the spring of the year. The first winter protect them from the frost, or they are apt to be killed by the freezing. The next spring transplant in the following manner:—Select a dry soil; dig a hole 18 inches deep, 3 feet wide: fill it up with small loose stones and clay, to within six inches of the surface; set your tree on that: take care of it, and it will grow well, and in four years bear nuts.

The steam factory of Nathaniel W. Cushing in Hanson, Mass., took fire on Saturday night last, and was destroyed with most of its contents. Loss estimated at from 8 to $10,000. Insured for $4000.

### Profits of Farming.

A correspondent of the Boston Cultivator, states the success of a man who left a lucrative business in the city of Philadelphia, for farming, to make profit. After two years trial, he was asked if he did not find the profits small, compared with those of his trade. He answered, "quite the contrary; I have already realized far more than I dared to anticipate, and I am at the end of two years richer than I ever could have become by 25 years of successful trade. It is true, I had more dollars and cents in trade than I have now, but that is dross compared with the blessings of body, and peace of mind, which gold and silver could never purchase. I eat, drink and sleep with an appetite; yawn at bedtime, and never in the morning; am up before the sun and yet the day is never too long; and more than all, I have no acceptances to take up.—Money! why what use have I for it? I raise my own food in the richest profusion, and my own clothing—my estate is annually increasing in value—then what is the use of money? I can't eat or drink it, if it were cut into mince meat."

### Nature of Spots on the Sun.

On the solar envelope of whose fluid nature there can be no doubt, is clearly perceived by telescopes, an intermixture, (without blending or mutual dilution) of two distinct substances, or states of matter; the one luminous, the other not so, and the phenomena of the spots and pores tend directly to the conclusion that the non-luminous portions are gasseous, however they may leave the nature of the luminous doubtful; they suggest the idea of radiant matter floating in a non-radiant medium, showing a tendency to separate itself by subsidence, after the manner of snow in air, or precipitates in a liquid of slightly inferior density.

### Soap.

The quantity of soap consumed by a nation would be no inaccurate measure whereby to estimate its wealth and civilization. Of two countries with an equal amount of population, the wealthiest and most highly civilized will consume the greatest quantity of soap. This consumption does not subserve sensual gratification, nor depend upon fashion, but upon the feeling of the beauty, comfort, and welfare, attendant upon cleanliness: and a regard to this feeling is coincident with wealth and civilization. The rich in the middle ages concealed a want of cleanliness in their clothes and persons, under a profusion of costly scents and essences, while they were more luxurious in eating and drinking, in apparel and houses. With us a want of cleanliness is equivalent to insupportable misery and misfortune.

### Ventillation and Chimney Tops.

We have received the report of a Committee of the American Academy of Arts and Sciences relating to various experiments with Chimney tops in reference to the best kind for ventillating currents, and these experiments have not onty established certain forms to be the best for this purpose, but also the proportion. The Report is Scientific in the highest sense, and we would wish were it possible to give elaborate extracts. The committee are ready to place the proportions of the proper forms of ventillation in the hands of manufacturers.

### Cooking and Copper.

There are many cases of poisoning, which are said to be the result of eating food, but which are the results of cooking the food, copper vessels being the primary cause Copper vessels soon loose their tinning in cooking, and acids are apt to combine with the metal, forming an active poison in the shape of salts in combination with the food cooked in the vessel.

### The Penalties of Distinction.

The Louisville Journal says:—"Gen Taylor is certainly paying the penalty of distinction. A daguerreotypist direct from Baton Rouge informs us that when he left that place seven daguerreotypists and five portrait painters were there, some actually at work upon the old General's likeness, and the rest impatiently awaiting their turn to get a chance at him, and every stage and steamboat brought a reinforcement."

A little fishing schooner was lying at Salem Mass., last week, which deserves notice She was manned bya veteran crew, consisting of skipper Marshall, aged 78; his brother aged 76, another man 76, and a *boy* 65. The vessel is forty-five years old, and the united ages of vessel and crew, number 340 years.

The Canadians are contributing liberally to aid the sufferers by the fire at Detroit, recently. A company of amateur theatrical performers are also giving exhibitions for the same same object. This is the way to weave tight the bonds of brotherhood between Canada, and the United States.

The first exportation of sugar was made from Texas in 1846, and amounted to only 50 hogsheads. The crop of 1847 amounted to 2000 hogsheads, of which between 500 and 600 hogsheads were exported. This year's crop is estimated at 5000 hogsheads.

Hosea Middlebrook, a young man of Rochester, leaped over the Gennessee Falls, not far from the place where Sam Patch made his memorable leap into eternity. Hosea met the same fate.

There are 768 banks in the Union. Their capital is nearly two hundred and ten millions. Circulation about one hundred and twenty-five millions. Specie about fifty millions.

An Irishman hearing sphinx alluded to in company, whispered to a friend, "Spinx! who's he now?" "A monster man!" "Och Munster-man! I thought he was from Connaught," replied the Irishman determined not to seem totally unacquainted with the great family.

A Yankee orator out west, vindicating his native Connecticut against slanders which have been uttered against her, said:

"As to Connecticut boys manufacturing horn flints and wooden nutmegs, I plead guilty, to these charges; they did manufacture wooden nutmegs, but they had to leave the State before they *could sell them.*

An inveterate wag intends issuing proposals to the principal cities of the world to illuminate their streets at a cheaper rate than can be done by gas companies—as he "makes *light*" of every subject that falls under his notice.

A large number, perhaps a majority of the standard works of English literature, were composed by men whose circumstances compelled them to adopt a very spare diet, and probably this is one cause of their superiority.

Horned frogs are plenty in Texas. They are grotesque little animals, who apparently live on nothing, but most probably on insects.

The Common Council of Savannah, Geo., have cut down the rice crops of Col. Greene, opposite the city. Cause, injury to the health of the City.

No. 1 wire is said to be an ample protection against lightning, put up as the large rods are. War ships use the wire with complete success.

It is an extraordinary fact, that when people come to what is called high words, they generally use low language.

The first college of which moderns have any record, was established at Paris by Alienus, a monk.

Judge Martin, of La., died worth $400,000 and upwards, yet he lived a poor rich man although of stern integrity.

A Bill has passed Congress granting newspapers sent from a publishing office, to go 30 miles from the office free of charge.

New flour, made from wheat harvested this month, sold at Columbia, South Carolina, on Friday week, at $5,50 per barrel.

Some beautiful specimens of pearl have been found in the Ocmulgee river, near Macon, Georgia.

The cotton and corn crops of the South are looking well.

Five inches of rain fell at one shower of two hours, in Savannah, two weeks ago.

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For the Scientific American,

### Flame.

Flame is volatile matter heated so as to become luminous. The light evolved is in proportion to the quantity of solid matter present in the combustible.

The element called hydrogen, is an example of the purest form of flame.

Hydrogen gas may be evolved in the following manner; place an ounce of small fragments of the metal zinc, in a wide-mouthed pint bottle; dilute two fluid ounces of sulphuric acid, with four ounces of water, in an earthen jug; this must be done by adding the acid very gradually to the water, and stirring them together with a piece of wood or a glass rod: the mixture becomes very hot and must be allowed to cool, and then one half is to be poured into the bottle containing the zinc; a brisk effervescence ensues, which is due to the evolution of hydrogen, the mouth of the bottle is then to be closed with a cork through which passes a brass tube nine inches long and rather more than a quarter of an inch diameter at its lower end, and so small at the other as only to admit of the entrance of a large sewing needle. Permit the effervescence to continue for about three minutes then hold a lighted slip of paper to the small aperture of the brass tube, and the hydrogen which is thence escaping will kindle and burn with a pale flame; until the effervescence ceases.

The pale flame of hydrogen is scarcely visible in broad day-light, and is invisible in bright sun shine: it is a type of pure flame, containing no solid matter producing no solid matter, but only the vapor of water by uniting with the oxygen of the air.

The flame of hydrogen, though exceeedingly pale is intensely hot, as may be proved by a simple experiment. Take a platinum wire twelve or fourteen inches long, and as fine as ordinary sewing thread, tangled into a flat knot, leaving only two inches straight; hold this and place the knot in the flame of the hydrogen, the platinum willl become white hot, and glow with great brilliancy; but it does not consume, it will be found unaltered after the experiment.

The term *Ignition* and *combustion* are commonly regarded as synonymous, but they denote two perfectly distinct phenomena. Ignition, (from the Latin *ignis*, fire,) is the evolution of light from a solid body, at an elevated temperature; it is neither necessarily attended by change of form nor new products The white hot platinum wire is an example of pure ignition, and it will exhibit the same curious phenomena at any future time.

Combustion, (from the Latin *comburo* to burn,) is the evolution of heat and light from a body necessarily attended by change of form and new products; or, it may defined, as an manifestation of intense chemical affinity between two or more bodies, attended by the evolution of heat and light, and the production of new compounds. The flame of hydrogen is an example of pure combustion or affinity between the evolving hydrogen, and the oxygen of the air; the two elements combining to produce the compound called water.

It is true that many substances undergo temporary ignition previous to combustion, and upon this fact is founded an explanation of the great light of common flames, for, example, instead of holding the platinum wire in the flame, as above described, let a little fine charcoal dust be shaken through the flame, and light nearly equal to that of a candle is instantly evolved

The charcoal is solid matter, and also combustible matter, therefore, the intense heat of the hydrogen flame momentarily ignites it, in which heated state it exerts affinity for the oxygen of the air, and then burns. Light is elicited from the ignition and from the combustion, the result of which is carbonic acid gas.

### Labor in the United States.

It has been officially stated that there are 3,719,000 persons engaged in agricultural pursuits in the United States; in manufactures, 781,800; in commerce, 119,600; in learned professions, 65,200; in ocean navigation 55,000, and in internal navigation no less than 33,000.

### Medical Uses of Salt.

In many cases of disordered stomach, a teaspoonful of salt taken three times a day is a certain cure. In the violent internal aching, termed cholic, add a tablespoonful of salt to a pint of cold water, drink it and go to bed; it is one of the speediest remedies known.—The same will revive a person who seems almost dead from a heavy fall, &c. In an apoplectic fit no time should be lost in pouring salt and water down the throat, if sufficient sensibility remain to allow swallowing; if not, the head must be sponged with cold water until the senses return, when salt and water will completely restore the patient from the lethargy. In the fit the feet should be placed in warm water, with mustard added, and the legs briskly rubbed, all bandages removed from the neck, &c. and a cool apartment procured if possible. In many nases of severe bleeding at the lungs, when other remedies fail, Dr Rush found two teaspoonsful of salt completely stayed the flow of blood.—In cases of bite from a mad dog, wash the part with strong brine for an hour, then bind on some salt with a rag. In toothache, warm salt and water held to the part and renewed two or three times will relieve in most cases. If the gums be affected, wash the mouth with brine; if the teeth be covered with tartar, wash them twice a day with salt and water.—In swelled neck wash the part with brine, and drink it also, twice a day until cured.—Salt will expel worms if used in the food in moderate degree, and aids digestion, but salt meat is injurious if much used.

It is reasonable to suppose that what is most plentiful on earth, is most essential to the wants of man. But we in general invert the order of nature, placing the greatest value on those things that are difficult to obtain We burrow in the earth to obtain gold from its bosom and consider it our all in all, whereas we can neither eat nor drink it. When sickness lays its clammy hand on man, he is not apt to look to simple water as a remedy for his disease, but like the Assyrian general when told by the prophet to bathe in Jordan, and be cured of his leprosy, he scouts the simplicity of the act and the medicine, and turns away. As it was with the Philistine warrior, so it is with men at the present day, with but few to retract wisely like him, their first doubtings. Simple salt, is almost a cure for every thing with sailors,—our landsmen would rather seek medicines that come from the Persian Gulf or the wilds of Hindostan.

### Rhodium.

Rhodium is a metal discovered by Dr. Wollaston in 1803, in the ore of platinum. It is contained to the amount of three per cent in the platinum ore of Antioquia in Columbia, near Barbacoas; it occurs in the Ural ore, and alloyed with gold in Mexico. The palladium having been precipitated from the muriatic solution of the platinum ore previously saturated with soda, by the cyanide of mercury, muriatic acid is to be poured into the residuary liquid, and the mixture is to be evaporated to dryness, to expel the hydrocyanic acid and convert the metallic salts into chlorides. The dry mass is to be reduced to a very fine powder, and washed with alcohol of specific gravity 0 837. This solvent takes possession of the double chlorides which the sodium forms with the platinum, iridium, copper and mercury, and does not dissolve the double chloride of rhodium and sodium, but leaves it in the form of a powder, of a fine dark red color. This salt being washed with alcohol, and then exposed to a very strong heat, affords the rhodium. But a better mode of reducing the metal upon a small scale, consists in heating the double chloride gently in a glass tube, while a stream of hydrogen passes over it, and then to wash away the chloride of sodium with fresh water.

Rhodium resembles platinum in appearance. Any heat which can be produced in a chemical furnace is incapable of fusing it; and the only way of giving it cohesive solidity, is to calcine the sulphuret or arseniuret of rhodium in an open vessel at a white heat, till all the sulphur or arsenic be expelled. A button may thus be obtained, somewhat spongy, having the color and lustre of silver. According to Wollaston, the specific gravity of rhodium is 11. It is insoluble by itself in any acid; but when an alloy of it with certain metals, as platinum, copper, bismuth or lead, is treated with aqui regia, the rhodium dissolves along with the other metals, but when alloyed with gold or silver it will not dissolve along with them. It may, however, be rendered very soluble by mixing it in the state of a fine powder with chloride of pottassium or sodium, and heating the mixture to a dull red heat in a stream of chlorine gas. It thus forms a triple salt, very soluble in water. The solutions of rhodium are of a beautiful rose color, whence its name. In the dry way, it dissolves by heat in bisulphate of potassa; and disengages sulphurous acid gas in the act of solution There are two oxydes of rhodium. It combines with almost all the metals; and, in small quantity melted with steel, it has been supposed to improve the hardness, closeness and toughness of this metal. Its chief use at present is for making the inalterable nibs of the so-named rhodium pens.

### Roman Artificial Pearls.

The nucleus of these pearls is formed of small pieces of fine grained alabaster. Holes are drilled through small blocks of this substance, and they are then shaped with the knife. These little blocks are afterwards coated. For this purpose the pearly and shining parts of oyster and other shells, is carefully separated from the white, opaque and rough parts, and is reduced to fine powder, which is mixed with a solution of isinglass in proof spirit, or with white transparent size of proper consistency. The beads are stuck on the points of slender pieces of bamboo, and dipped into the solution above mentioned; and then the other end of the pieces of bamboo are stuck in earth contained in pots, so as to stand upright, and at such a distance as to keep the beads from touching each other.—This is performed in a warm room, and as soon as the coat is dry, the beads are again dipped in the pearly composition, and the operation is repeated until the beads are sufficiently coated. Beads so made, are extremely durable, and not so liable to injury as those made of glass bulbs, coated interiorly with the powder of the scales of the bleak, fixed with isinglass, and afterwards filled up with wax.

### Families of Literary Men.

Men of genius, says a speculative genius in the Quarterly Review, seldom leave more than "a brief progeny behind them. With the exception of Surrey and Spencer, we are not aware of any great English author of at all remote date, from whose body any living person claims to be descended. There is no other real English poet prior to the middle of the eighteenth century, and we believe no great author of any sort, except Clarendon and Shaftsbury, of whose blood we have any inheritance amongst us. Chaucer's only son died childless; Shakspeare's line expired in his daughter's only daughter. The granddaughter of Milton was the last of his blood. Newton, Locke, Pope, Swift, Arbuthnot, Hume, Gibbon, Cowper, Gray, Walpole and Cavendish, never married." Yet for all this, no theory can be formed from the facts set forth, as many great men have transmitted through successive ages a numerous posterity, while many men destitute of either talent or genius have left no family tree behind them.

### Ruins of Baal-bek.

Baal-bek, valley of Baal, is the Arabic name. As Constantinople is the Stamboul of the Turks, and Damascus in El Sham. In consequence of the burning of the Alexandrian and other libraries, the ancient history of this place is very much lost. It was doubtless much of the same age with Heliopolis in Egypt, and was established soon after the deluge. Two perennial streams, the Litane and Bourauni, flow into the valley. The goodly Lebanon in its full sublimity extends up and down, ridge beyond ridge, perhaps twenty miles distance in the west, and Anti-Lebanon, its fraternal mountain, ranges up and down in the East, twelve miles distant. Simple, attractive, majestic, awe-inspiring, is the scene. Yet this might have had little or no influence in the selection of the spot, even in a superstitious age. Heliopolis or Baal bek is now a small town of little importance. The soldiers barracks, constructed by Ibrahim Pacha and now vacant, make quite a show. An ancient wall, skirting the hills, may mark out the boundary of the former city. Pillars and tombs in the vicinity would in a different situation attract some attention, but silence reigns, where busy and joyous multitudes once lived! No sound of hammer or axe is heard, no bell or trumpet, no shout of men or laugh of children, from morning to night—There 3000 years ago were assembled the dense multitude under the open heaven to bow in humble prostration to the sun. A splendid idolatry was long sustained. Human victims were probably often offered in sacrifice. The stones near the foundation on the north side are immense in measurement, and grooved exactly in the style of those in the foundation of Solomon's temple at Jerusalem.

### Foes of the Rattlesnake.

The rattlesnake has a superior foe in the deer and blacksnake. Whenever a buck discovers a rattlesnake in a situation which invites attack, he loses no time in preparing for battle. He makes up to within ten or twelve feet of the snake—then leaps forward and aims to sever the body of the snake with his sharp bifurcated hoofs. The first onset is most commonly successful, but if otherwise the buck repeats the trial, until he cuts the snake in twain. The rapidity and fatality of his skillful manœuvre leaves but slight chance for his victim either to escape or eject his poison into his more alert antagonist. The blacksnake is also more than an equal competitor against the rattlesnake. When the black and rattlesnakes are about to meet for battle, the former darts forward at the height of his speed, and strikes at the neck of the latter with unerring certainty, leaving a foot or two of his own body at liberty. In an instant he encircles him within five or six folds, and then stops and looks the strangled and gasping foe in the face, to ascertain the effect produced upon his corseted body. If he shows signs of life, the coils are multiplied and the screws are tightened—the operator all the while narrowly watching the countenance of the helpless victim. Thus the two remain thirty or forty minutes—the executioner then slackens one coil, noticing at the same time whether any signs of life appear, if so, the coil is resumed, and retained, until the incarcerated wretch is completely dead. The moccasin snake is destroyed in the same way.

### The Forests of Oregon.

It is more especially in the forest that the grand, the picturesque, the sublime, the beautiful, form the most singular and fantastic combination. From the loftiest giants of the forest, down to the humblest shrubs, all excite the spectators astonishment. The parasites form a characteristic feature of these woodlands. They cling to the tree, climb it to a certain height, and then, letting their tops fall to the earth, again take root—again shoot up—push from branch to branch—from tree to tree in every direction—until tangled, twisted, and knotted in every possible form, they festoon the whole forest with drapery, in which a ground work of the richest verdure is diversified with garlands of the most varied and many colored flowers. In ascending the Columbia, we meet, from time to time, with bays of considerable extent, interspersed with handsome little islands, which, thrown as it were, like groups of flowers and verdure, present the most charming spectacle. Here the painter should go to study his art—here would he find the loveliest scenery the most varied and brilliant coloring.—At every step the scene becomes more ravishing the perspective more noble and majestic. In no other part of the world is nature so great a coquette as here.

### Effect of the Spirit Rations in the British Navy.

We learn by recent intelligence from England, that the British Government have issued orders to all its consuls in different parts of the world to institute inquiries into the character and capabilities of British seamen as compared with those of other nations The result thus far shows that the British seamen are below others in morals, and as seamen are much less efficient than our own. This has been attributed to the spirit rations in the navy.

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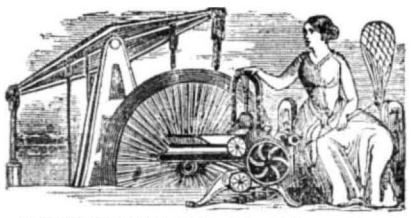


# New Inventions.

### New Roofing Tiles.

A new and beautiful kind of ornamental roofing tiles have been lately invented in that land of tiles, Flanders. They are very ornamental and some shiploads of them have been sent to England, where they are very highly spoken of as being superior to slate, cheaper and can be made into every variety of shape and color, although blue is the principal color of those already manufactured. We think that these tiles, if they could be imported here cheap, would be better than tin or slate roofs, as they are represented by some of our European exchanges to be very strong, owing to the materials of which they are composed. It is to be hoped, however, that the artificial slate lately discovered at Sharon, Ohio, and patented by Mr. Blake, will soon be brought into profitable use, if it is all that has been represented, the price being only $3 per 100 pounds. Its composition is, as analysed by Dr. Chilton, of this city :—magnesia 25, alumnia 20, silex 20, black oxide of iron 10, sulphuret of iron 10, lime 10, carbon 5.= 100. It is therefore a good non-conducting substance and most excellent for roofing. It lies about 20 feet below the surface, and is a very singular deposit ; it appears as if there had been an excavation in the rock about five feet deep over a space of three or four acres, and the space filled with this metal. When taken from the mine it has about the consistency of cold tallow, but an exposure to the air ten or twelve days turns it to stone. They are obliged to grind it when green, then grind it again, which leaves it fine enough to mix with the oils for use; after it is put on a few months it turns again to stone, forming a complete stone covering to whatever applied.

### Paper Folder.

A machine has been recently invented in Springfield, Mass., by Messrs. Crane, at their paper works, for folding newspapers and other printed matter. It is to be connected with a cylinder, or improved Adams press, so that the sheets come forth from the press folded in the required form. The invention is said to be simple and beautiful—being simply a rocking board which receives or catches the paper at the middle of the sheet and by a back motion folds it over. The inventors warrant it to fold 3000 papers per hour of any size, with the greatest accuracy.

### Plumb Rule.

Mr. J. E. Carpenter, of Philadelphia, has invented a new plumb rule. The principle is an additional spirit glass on the side, which can be set plumb with a screw, in case of its warping or twisting. This spirit level has just been introduced and will grow into extensive use.

### Fitzgerald's Cannon.

Mr. Fitzgerald, of this city, exhibited on Friday last his newly invented section cannon in front of the Merchants Exchange, Wall street. This cannon, as we have previously stated, is made of wrought iron in sections, to be taken apart and put together again so as to be easily transported over mountains, through swamps and uneven ground.

### Atmospheric Churn.

The St. Louis papers allude to a new and singular churn, lately patented, and now exhibiting in that city. Butter is made by it out of fresh milk, and *without* the use of water. The principle consists in the introduction, by means of exceedingly simple machinery, of the atmospheric air into the body of milk.—The air, by its own action, produces the separation of the milk from the butter. The machinery is very simple and the principle undeniable, and the operation of churning can hardly be said to be labor at all. By this machine, an ordinary churning, it is said, can be made by a child of four years of age, and that too without waiting for the cream to rise or the milk to sour. Butter is made in fifteen minutes from fresh milk, and the cost of the churn is not more than that of an ordinary one. It is an Illinois invention and has certainly the priority of the Irish Bishops, noticed a short time since in our columns. It is we believe constructed on the principle of the bellows, and the inventor is making his fortune out of it. We have seen butter made by the common rotary paddle churn in fifteen minutes, but never from fresh milk.

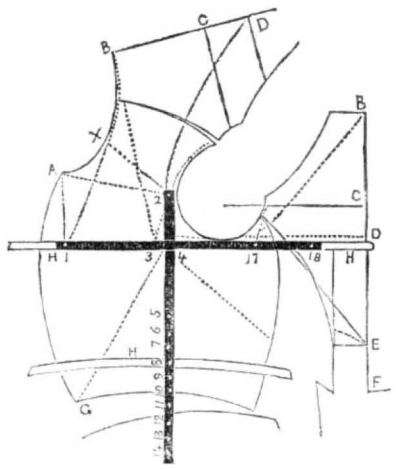
### Improvement in Organ Pipes.

A new and valuable improvement in organ pipes has recently been made by Messrs. Boardman and Dutton, church organ manufacturers of Mount Vernon, N. H., who after much time and experiment, have succeded in materially improving the tones of wooden pipes for organs, by a peculiar construction of the pipes at the thoraz by which the volume of wind is perfectly equalized before striking that part producing the sound, giving in a single pipe a mellow, rich, powerful, and harmonious tone. The diapason alone is said to give the harmony of the full organ, rendering these superior to metallic pipes which they dispensed with altogether in their improvement.

The advantages said to be derived from the invention, consists in the cheapness of their construction, the freedom of the wooden pipes from the expansion and contraction occasioned by the variation of temperature, to which the metallic pipe is subject, and the lightness and portability of the instrument, together with much less liability of injury in moving.—*Exchange.*

We believe that many of the old organs had reed pipes—not metal.

### Tailor's Body Measure.

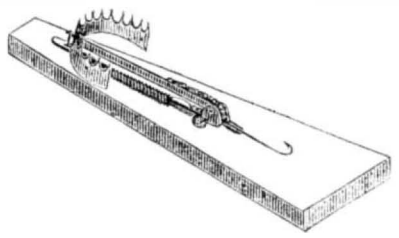



This is an excellenf instrument, the invention of Mr. Charles W. Hanford, of Nunda, Livingston county, N. Y. It is for the purpose of taking the measure of persons correctly for cutting their garments, and experience has proven that it is most beautifully adapted for that purpose—superior to any thing ever before known or used, and beside it is simple, neat and cheap. It at once commends itself.

It is made of spring steel very thin ; each piece is half an inch wide, with holes in them at the figures ; the length can be varied from 12 to 18 inches, as best suits the person who uses it, only not to have the front and upper arms of the instrument longer than represented in the cut. When the measure is to be taken for a coat, the instrument is placed upon the person in the same manner as seen in the cut, being bent round the body and fastened by straps H H H, attached to it, so as to remain firm until all the measures are taken. The tape measure has a hook attached to the end of it to fasten at the different figures on the instrument. Commence measuring at B, top of the back, down to C, centre of back scye, to D, bottom of scye, to E, hollow of the waist, to F, length of waist, and then length of coat; then measure to A, (height of collar bone in front,) from figure 1, and then from figure 2, to B, (top of back,) from figure 1, and then from figure 3, from figure 2 over the shoulder to D, and across it to X, from figure 3 over the shoulder to figure 17, from figure 3 under the arm to D, and then to B, from figure 4 to E, at hollow of waist, and then to G, length of coat in front.

Having taken all these measures and entered them on the measure book, it will be a very easy matter to see how they are applied in drafting a coat, by tracing the dotted lines on the cut. The back can be made any shape desirable, only get the points at B C D E and F exactly, then draw a line from D, at a right angle with the back seam across the cloth and apply the instrument to the line as far forward as the measure from figure 3 to D requires, then draft the forepart as represented.

### New Rat Trap.



This is a new rat trap which threatens destruction to all the old rats in our dominions, and if a rat gets out of its clutches, all we have to say is, that he is a lucky fellow—and more than bullet proof. This trap is as famous as one noticed in a foreign exchange : " Spring guns and man traps in this garden and the fellow that gets his foot into one it will break a horse's limb." The toothed jaw is represented in the cut as being held down which is accomplished by the bait rod or wire (known by the hook) having a small eye on the other end into which a nib on the forepart of the jaw passes and holds the jaw firm down. The jaw is attached to a strong rod having a spiral spring around it with its tension towards the hook, so that when a rat pulls on the bait on the hook, the eye slips off the nib of the jaw, and the jaw having a swivel joint it springs backward like a thunder clap nailing the rat to the counter for his impertinence.

These traps are only 50 cents apiece and sold at this office. Nobody should be without one if they want to have a real rat killed at a price not worth calling cost, considering its qualities.

### Hollow Iron Piles.

The invention of Dr. Potts, of London, called the *pneumatic process* for sinking piles, has been applied with astonishing success to the sinking of tubular iron piles.

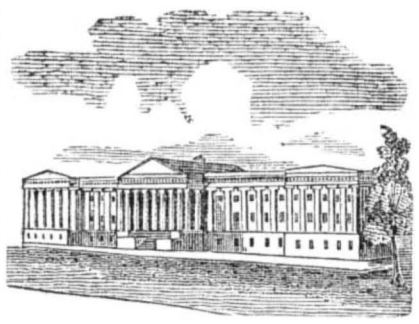
A hollow iron pile is placed upon the surface through which it is required to be sunk, and by means of an air pump a vacuum is produced. This having been effected, the sand, shingle, &c. rush in and the pile descends by its own weight. The water, sand, &c. is then discharged by pumping, a fresh vacuum is formed and the pile sinks further and further. This invention is doing wonders on the other side of the Atlantic. More has been done in one hour by the air pump and hollow iron tube than has been done in one day by the old system of wood pile driving.—This invention is well adapted for the foundations of bridges, and it is to be hoped that many of our engineers will take the hint about new improvements, and not be like the dark minded rulers of this ancient city, who might keep our streets wet and free from dust all the time with Croton water, but allow them to be watered by the oldest fashioned ricketty machines of travelling water casks that ever were invented, nice subjects for ancient museums and antiquarian devotion.

### New Materials for Paving.

Take 70 parts of dry peat and 30 parts of pitch or coal tar and mix them well together. After being allowed to rest for a few hours, it is put into an iron pot and boiled for three hours. Ten per cent of the oxide of iron is then added along with a considerable quantity of fine mud and sand well mixed and while the composition is hot it is moulded into slabs or blocks, which soon become very hard and excellent for paving.

### Massey's Grain Drier.

As the time is now approaching when large exports of grain must be made to Europe owing to the undoubted appearance of failure in the potato crop, our exporters should be getting their Grain Dryers ready, and we would call attention to Massey's Grain Drier, an engraving of which appeared in No. 32 this volume Scientific American. The inventor has removed from Providence, R. I. to this city, and he will sell on reasonable terms.



### LIST OF PATENTS

ISSUED FROM THE UNITED STATES PATENT OFFICE,

*For the week ending June* 20, 1848.

To Louis Wertz, of Chambersburg, Penn., for improvement in Water Wheels. Patented June 20, 1848.

To John H. Tower, of Kirkland, N. Y. for improvement in Kilns for Drying Grain. Patented June 20, 1848

To Dummer Pattee, of Ypsilanti, Michigan, for improvement in Cultivators. Patented June 20, 1848.

To John Booth, of Mobile, Alabama, for improvement in Brick Presses. Patented June 20, 1848.

To John C. Emery, of Concord, N. H., for improvement in Sofa Bedsteads. Patented June 20, 1848.

To John Romans, of Romansville, Penn., for improvement in Straw Cutters. Patented June 20, 1848.

To Stephen C. Parkhurst, of West Bloomfield, N. J. for improvement in Carding Machines. Patented June 20, 1848.

To. R. L. and B. F. Stevens, of New York City, for improvement in increasing the speed of Vessels. Patented June 20, 1848.

To M. Hemphill and B. H. Knox, of Washington, Ohio, for improvement in Water Wheels. Patented June 20, 1848.

DESIGNS.

To Robert Wood, assignee of William Hamilton, of Philadelphia County, Penn., for Design for Pier or Centre Tables Patented June 20, 1848.

To Robert Wood. assignee of William Hamilton, of Philadelphia County, Penn., for Design for Ornamental Brackets. Patented June 20, 1848.

### INVENTOR'S CLAIMS.

#### Paper Hangings.

Russell H. Hawes, of Worcester, Mass.—Improvement in Printing Paper Hangings.—Patented April 18, 1848. Claim.—Having thus fully described my machine, what I claim as my invention, and desire to secure by letters patent, is combining the carriage with the coloring apparatus, as described, so as to apply the color roller only once over the surface of the block at each impression, as described. I also claim drawing the paper through by the border, as described, by pinching it between the rings and wheels or by an analagous device so as exactly to regulate the length drawn through and not mar the printed portion, as herein set forth in the first part of my description. I also claim the employment of expanding rings, constructed substantially as above described, for the purpose of regulating the length of paper to be drawn through to suit the pattern to be printed.

#### Balance Valves for Steam Engines.

William B. Hill, of Grand Rapids, Michigan. Improvement in Balance Valves for Steam Engines. Patented April 25, 1848.—Claim.—I claim as my invention the tubular construction of the double puppet valve, for the purpose of conducting the steam through said tubes to the lower or opposite valves on its passage to or from the cylinder, substantially as set forth, instead of passing round them in the usual way.

#### Gutta Percha and Caoutchouc.

C. F. Durant, of Jersey City, N J. For improvement in dissolving and softening Gutta Percha and Caoutchouc. Patented April 25, 1848. Antedated Oct. 25, 1847. What I claim as my discovery and invention, is the application of perchloride of formy, or otherwise known as chloroform, to soften and dissolve gutta percha and to soften and dissolve rubber.

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NEW YORK, JULY 1, 1848.

### Theory and Practice.

The word theory is very much abused. It is too generally considered to be a system of vague thought—a code of opinions set forth by men who think and write and do nothing more. This is a general and great mistake, and when we hear, as we often do, the expression, "*this is* mere theory, not according to practical results," we always endeavor to correct the error. There can be no theory without experiment—theory is just accumulated and arranged experiment, and this constitutes a science, be it Chemistry or Geology. There are many theorists who are not practical men, but their theories are the result of practical men's experience. There is, therefore, a great difference between *a theory* and a theorist. Theory and practice are twin sisters. As well might the astronomer predict the revolution of the spheres and tell all their movements without the telescope, as a man to found a theory without practice; and the astronomer who would observe the heavens like a child gazing into a camera obscura, would just be to the world like a practical man without a theory. Theory and practice consist in a man understanding the principles which *govern* the various operations at which he labors—the knowledge of the head and the skill of the hands. What man—what mechanic, will plead an ignorance of either of those requisites so essential to be good workmen and intelligent men? We trow there is not one. But where is the evidence of universal theory and practice? Is it not a fact that many, day after day, finish parts of machines and cannot tell the relative propertions which one part should bear to the other nor where this and that part should be placed in their relative positions? It is true, and many regret, candidly regret their want of knowledge in this respect. There is a remedy—they must read, they must reflect, and they must converse upon those subjects on which they desire to be enlightened. No man can acquire *all knowledge*, but each in his sphere can be *a king*, and there are no men who have such advantages in this respect as our practical working men. They are the men who above all others, can, if they will, understand the full meaning of Theory and Practice.

### Sleepers for Plank Roads.

A correspondent of the Memphis (Tenn) Eagle, of the 7th June, in an interesting article on "Plank Roads," speaks of preparing or kyanizing the timbers to prevent their decay, and refers to the railroad of prepared timber which was in operation near London some years ago. He says: "If this process should not be too expensive, plank roads being thereby rendered imperishable—and not wearing by use, would be preferable to railroads, and, indeed, would be a foundation for railroads, if the other should not be deemed preferable—because all that would be required to convert a plank road into a railroad, would be to spike down rails 3 inches thick upon the plank and put cars upon them. The Editors of that incomparably valuable paper the Scientific American, can, perhaps, furnish the information required. To wit: Is the road aforesaid, near London, still in use, and still situated as at first? If so, how were the timbers prepared? If the preparation be calculated to prevent decay and wear, why has it not come into use to prepare timbers for pavement? TELPERT."

As it regards the English wooden railroad, we are unable to tell in what condition it is in. We know that in England the iron tracks are cheapest in the end, because timber is so high in price in that country. But as it regards the preparation for the preservation of wooden sleepers, Telpert has suggested a very important improvement for our plank roads, a suggestion which we hope to see carried into practice in the construction of all new plank roads. We recommend the sulphate of copper as being the best substance to use for this purpose. It forms an insoluble compound in the wood and is not expensive nor deliquescent. It is also a destructive poison to insects. Corrosive sublimate no doubt is better, but it is very expensive. The way to prepare the wood is just to immerse it in the liquid, or else by placing the timber on an incline, the liquid to be placed in contact with the upper end, and soaking down through the pores of the wood, expelling all the air. This latter plan is the best, because it is very simple. Iron cylinders are used by the French, into which the timber is placed and the air exhausted by an air pump, and then a solution of corrosive sublimate forced into the cylinder, which instantaneously rushes into the pores of the wood.

It never can be expected that wood will endure as long as iron, be it prepared in any manner whatever. Nor is it to be expected that any preparation will make one kind of wood as enduring as another in any situation. Full experiments in preparing timber have been made by eminent men and the result has always been in favor of those kinds of timber which naturally are the most enduring. This is a subject which ought to arrest the attention of those who are engaged in the construction of plank roads. Chesnut and cedar are certainly the best sleepers that can be used.—Hemlock does well for the planking, and considering its price it is the best planking that can be used, but we prefer oak were it as cheap. The utility of plank roads is unquestionable, especially for level districts, be they sandy, clayey or swampy. Our broad and beautiful country is now well threaded (and "the work still goes bravely on,") with railroads, but our byroads, those roads so essential to the agricultural comfort and prosperity of our sturdy yeomen, are in general unworthy of our character for enterprise and industry

The common plan of repairing roads, used to be by filling up the ruts and mud holes with dry mud by a scraper—a slovenly and miserable way of road-making. If it is true that "the civilization of a nation is represented in its roads," we trust that our people will not neglect to take the hint and profit by the construction of good plank roads, especially where they can be built with so much advantage to our rural population.

### Atmospheric Railways.

The London Mining Journal contains the following notice of a proposed system of atmospheric propulsion, patented by Mr Dawes of Old Kent and the City Road, London. The idea of using atmospheric air as a locomotive agent has for years been familiar to many minds, but great difficulties were anticipated in reducing the very reasonable theory of the work to practice, a principal one consisting in the extreme rarity of the fluid sought to be employed.

The invention of Mr. Dawes consists of "a truly cylindrical tube, closed throughout, divided into sections of about two miles, one end of each section being closed, the other open, in each of these sections is a truly fitted piston, which we will suppose to be at the bottom or closed end of the tube, at the open end is a drum, around which a rope is wound by proper gearing, the action of this drum sets in motion another drum the reverse way. The piston having arrived at the open end of the first section, a perfect vacuum is formed in the tube, and the piston being set free, the atmospheric pressure forces it down the tube with great velocity, of course drawing the train attached, and as one rope is wound up the other is unwound.

The patentee proposes to have stationary steam engines, of about ten horse power at every two mile section of tube which he considers would be sufficient to raise the necessary power to drive heavy trains at any required speed every half hour. He proposes that the lines should be laid down on the natural surface of the ground, on the usual portion of turnpike roads, and working without any interruption to the usual traffic. The diameter of the tube would be about three feet; one foot in the same would drive twenty to thirty feet on the road: consequently from one hundred and fifty, to two hundred feet of tube, in one or more lengths, would drive a train one mile. The piston moves slowly, while the train runs with great velocity. The plan proposed for the formation of a company is, in the first place, to raise by subscription sufficient to lay down two miles of railway, and thus truly test its capabilities; these subscribers to have the choice of shares with a good bonus should a company be formed, and the remainder to be submitted to the public. The cost of such a line including propelling power, with all accessories complete for driving a heavy train every half hour, is estimated at two thousand five hundred dollars."

The scheme to our view is very airy—not half so good as many others already well known.—ED.

### Washing Butter.

As a great number of our subscribers are engaged in agricultural pursuits and have a taste for science in every one of its departments, especially what relates particularly to their own profession, we extract the following remarks from the Boston Cultivator, which are positively sound to our knowledge, and to which we would request earnest attention.

"We doubt the utility of washing butter in cold water. There is in butter properly made from good cows in the best of feed, a peculiar rich aroma and flavor, which is, in some measure, washed away by the use of cold water.

We know that a thousand evidences may be brought forward to justify washing in the shape of Dutch butter, and good productions throughout the country. But we want something more than good butter. We want extra fine. Some say butter is an oil and water will not dissolve it. But what evidence have we that the fine savor of butter consists in oil? We have seen butter that had all the peculiar properties of oil and grease, and yet so far from having a delightful savor, it had the contrary, and if used for crackers, as is often the custom with bakers, the odor was apparent in them, on wetting them in warm water.

Water will surely extract the fine flavor of butter, as has been shown by putting balls of butter in salt water for preservation It becomes insipid; and we have no doubt that washing butter has the same effect, only less from the transient operation. The finest butter that we ever tasted was well made without washing in water, and it was sometimes kept in the best condition one year, and with no other preservative but salt.

We have found sugar an excellent preservative for butter not to be used soon, and so is saltpetre, but as to the effect of the latter on health much has been said, and doctors disagree. To preserve butter for a long time, it is usually salted high; and if we can modify this excess of salt, by using more palateable and salutary substances, of equal efficiency in conservative qualities, it will be an improvement. Sugar has these qualities. We have the opinions of chemists, judging from the composition, decomposition, and combination of various substances in their laboratories, which are all very well so far as they extend, but we want the effect produced in the laboratory of nature on the living animal. The plain practical effect is the philosophy that we need."

### Shingle Manufactory.

Mr. S. N. Cutler, of Ashland, Mass., has a manufactory where shingles are made with great economy and expedition. The logs are barked, then taken into a mill and sawed in halves or quarters, according to size, then with a circular saw they are cut into suitable lengths. These bolts are put into a large water tight box that holds more than a cord, and covered with water, which is heated by a fire in a copper tube or funnel, running nearly through the box, and returning to the other end where the smoke is discharged, a very economical mode of heating, both in construction and fuel. The bark from the logs supplies the fuel.

After soaking nearly 24 hours, the bolts are taken out and placed on a bed, that moves gradually under a great knife, that goes with great force and rapidity, cutting through bolts 8 or 10 inches wide, knots and all, and making 150 strokes per minute. Two men and a boy are employed, who complete 8,000 a day, ready for sale, after the timber is prepared for the boiler. This quantity is cut out in an hour and a half. Then the boiler is filled again. Much depends on softening the wood by thorough and long soaking in hot water.

The shingles are jointed on the side of a circular wheel, containing two jointers, which goes rapidly, and operates with great expedition. They are then packed in bundles, and ready for market. The wood generally used is chestnut, and it is very durable.

### New England Lead.

A lead mine was discovered about eighteen months since, in Thetford, Vt, about one and a half miles from the Connecticut River Railroad. The mine and several hundred acres of land appertaining thereto is owned by Mr. A. Stowell, formerly of Charlestown. It is only about four or five months since, that a furnace was erected on the ground, and the smelting of the ore commenced Thus far the product exceeds the most sanguine expectations of the owner, the ore yielding about seventy-five per cent of pure lead. The lead is pronounced of an excellent quality. The vein which is now being worked, is from four to 25 inches in width, and has been worked to the depth of some twenty-five feet, and appears to be inexhaustible. Two men with one cord of wood, will turn out in twelve hours, a ton of the pure article.

### Peg Manufactory.

The Waterville Mail states that Mr. M. Y. Reynolds, at Brown's Corner, in Vassalboro, Mass., has machinery in operation which can easily complete of a most superior article of shoe pegs, three hundred bushels a month. These are sold readily to the shoemakers at $1,25, to $1,50 per bushel. The machinery is of Mr. Reynold's own invention, secured by patent. The pegs are very superior in a great many respects to any now made, and the demand is greater than can be met, with the present machinery. The wood used is second growth yellow birch, for which five to eight dollars a cord is paid. A cord will average about fifty-five bushels of pegs. The wood is worked while green, and is sawed, planed, pointed, split and polished by machinery.

### Preservation of Posts.

Mr. Philip Wilbur, of South Dartmouth, has reported an important experiment which he has tried with salt in preserving fence posts. Of two posts, the same kind of timber, cut and set at the same time, one has long since decayed. and become worthless, whilst the other saturated with salt, now stands in a remarkable state of preservation. The manner in which Mr. W. applies the salt is by boring an inch and a half or a two inch hole obliquely, about eight inches above the ground, and fills with salt from time to time as it becomes dissolved.

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## Arts, Manufactures and Machinery.

*Spreading force rapidly over a large space of time.—Tanning and Bleaching Salt.*

This is one of the most common and most useful of the employments of Machinery. The half minute which we daily devote to the winding up of our watches is an exertion of labor almost insensible, yet by the aid of a few wheels its effect is spread over the twenty-four hours. In our clocks this extension of the time of action of the original force impressed is carried still farther; the better kind usually require winding up once in eight days, and some are occasionally made to continue in action during a month or even a year. Another familiar illustration may be noticed in our domestic furniture; the common jack by which our meat is roasted, is a contrivance to enable the cook in a few minutes to exert a force which the machine retails out during the succeding hour in turning the loaded spit; thus enabling her to bestow her undivided attention on her other duties. A great number of automata, and other Mechanical toys moved by springs may be classed under this division.

The process of tanning will furnish us with a striking illustration of the power of Machinery in producing this effect. The object of the Art is to combine a certain tanning principle with every particle of the skin to be tanned. This, in the ordinary process, is accomplished by allowing the skins to soak in pits containing a solution of Tanning matter; they remain in the pits six, twelve or eighteen months, and in some instances (if the hides are very thick) they are exposed to the operation for two years, or even a longer period. This length of time seems to be required in order to allow the Tanning matter to penetrate into the interior of a thick hide.

The improved process consists in placing the hides with the solution of Tan in close vessels, and then exhausting the air. The effect of this is to withdraw any air which might be contained in the pores of the hides, and to employ the pressure of the atmosphere to aid capillary attraction in forcing the Tan into the interior of the skins. The effect of the additional force thus brought into action can be equal only to one atmosphere but a further improvement has been made: The vessel containing the hides is, after exhaustion, filled up with a solution of Tan; a small addditional quantity is then injected with a forcing pump. By these means any degree of pressure may be given which the containing vessel is capable of supporting; and it has been found that by employing such a method the thickest hides may be tanned in six weeks or two months.

The operation of bleaching linen in the open air is one for which considerable time is necessary, and although it does not require much labor, yet from the risk of damage, and of robbery from long exposure, a mode of shortening the process was highly desirable. The method now practised, although not mechanical, is such a remarkable instance of the application of Science to the practical purposes of Manufactures, that in mentioning the advantages derived from shortening natural operations it would have been scarcely pardonable to omit alluding to the beautiful application of chlorine in combination with lime to processes of bleaching.

Another instance more strictly Mechanical occurs in some countries where fuel is expensive, and the heat of the sun is not sufficient to evaporate the water from brine springs. It is first pumped up to a reservoir, and then allowed to fall in small streams though fagots. Thus it becomes divided, and presenting a large surface, evaporation is facilited and the rine which is collected in the vessels below the fagots is stronger than that which is pumped up. After thus getting rid of a large part of the water, the remaining portion is driven off by boiling. The success of this operation depends on the circumstance of the atmosphere not being saturated with moisture: if the air, at the time during which the brine falls through the fagots, holds in solution as much moisture as it can contain in an invisible state, none can be absorbed from the salt water, and the labor expended in pumping is entirely wasted. The state of the air, as to dryness, is therefore an important consideration in fixing the time at which this operation is to be performed, and an attentive examination of its state, by means of the Hygrometer, might be productive of some economy of labor.

Our friends in Syracuse and Salina will not forget this.

For the Scientific American.

### Hints on Steam Boilers.

Suppose a small copper flue such as passes through the water in a locomotive boiler wrapped closely from end to end spirally with a prismatic bar of iron, the narrow base of the prism next to the tube and its elongated sides extending out; let it be brazed to the tube throughout its length—the tube would then appear a screw with a deep cut thread. This will give an increased extent of evaporating surface and heat conducting material to the tube, and will, I am confident, increase to a considerabl degree the evaporating power of the tube—the heating surface remaining the same. I make this induction from what Dr. Ure says in his article on Evaporation, as to his experiments with thick and thin boilers, and as to the threefold power of evaporation of a boiler when plunged in a hot fluid medium which has its *outside* corrugated to a threefold expanse of surface. If the corrugations will aid in the *abstraction* of heat from a fluid medium, will they not more rapidly *radiate* and *impart* it to the water?

Another illustration:—An evaporating boiler, say sugar boiler, twenty four inches diameter, consisting of six co centric cylinders, 12 to 18 inches long, the end of the cylinders constituting the bottom common to them all; the upper *open end* the top of the boiler.—Here we have about a threefold or fourfold extent of evaporating surface and heat conducting material, accelerating the evaporating process. The increased first cost of a sugar boiler would be esteemed a trifle. F. S.

*Vicksburg, Miss. June*, 1848.

For the Scientific American.

### Glass for Lamps.

It is well known that artificial is far more yellow than natural light. This is the reason why green colors and blue are scarcely to be distinguished by candle light. Owing to this fact, it is more injurious to the eyes to read or labor during those hours in which artificial light has to be employed. It frequently happens that printers, shoemakers, and many other mechanics and artists, have tender eyes and are apt to become *near-sighted*. We think that something might be done to mitigate the evil, if not prevent it. Let our lampmakers have the glasses of their lamps made of a slight bluish tinge, which would nullify in a great measure the evil effects of yellow or red glare of artificial light, and produce a light more like day-light. This would afford relief to many who have much reading or writing as well as many artists who have to labor by the midnight lamp. Will not some of our lamp makers carry out in practice these suggestions. R. B.

*New York, June* 14, 1848.

For the Scientific American.

### Belting for Machinery.

In visiting a number of jobbing shops and little factories where belting to a considerable extent is required, it is evident that there is much ignorance and want of economy in the proper principle of making belts. The results are, loss of speed by belts slipping, and also loss of time by their breaking, not taking into view the irregular serpentine appearance they exhibit while running. The leather should be tanned expressly for the purpose, the large belts cut from the middle of the hide, the smaller ones from the side pieces. The soft, spongy or thin parts should be cut off, and the leather be of an equal thickness so far as practicable—this being done the pieces should then be put into a tub of clean cold water, leaving it in that immersed condition for about one hour, then taken out and placed upon a rack, which can be done in different ways, the object being to stretch it as much as possible, the method can easily be suggested.—After remaining on the rack or stretching board for three or four days and become perfectly dry, the pieces should be taken up and the ends to be joined planed off in a regular form so as to give an even joining. The most substantial way is first to glue and peg the ends to be joined, then sewing it Much care is required in cutting the hide, and also when joining the pieces so as to make a straight even belt. Where leather cutters are not at hand, the leather should be planed when taken from the stretching board or drum, so as to make it as near one thickness as possible. A large or main belt made on this principle, and rubbed over with neatsfoot oil once a week, will give more regular speed and last the double of the time, besides economy in the saving of leather, and experience has established the correctness of placing the smooth side of the belt, next the drum or pulley.

*Wheeling, Va. June*, 1848. H. M.

### Quinine.

Quinine, called also *Quina*, is an alkaline substance, producible from yellow bark and red bark; the combination of which, with sulphuric acid, is at present much used by the medical faculty. For obtaining this medicine two Troy pounds of yellow bark, is boiled in two wine gallons of water, mixed with two ounce measures of oil of vitriol, the decoction is strained through a linen cloth; the residue on the filter boiled again, with a fresh quantity of soured water, and filtered. To the decoctions mixed together is gradually added powdered lime, until the decoction has become slightly alkaline, and of a dark color, which generally requires about half a pound of lime. A brown flaky sediment falls down, which is separated by straining through a linen cloth, washed with cold water and then dried. When this sediment is dry, it is to be digested in several successive portions of spirit of wine, with a moderate heat, for some hours, until all the bitterness is extracted.—The several portions of spirit are then mixed and distilled with a gentle heat until three quarters of the spirit has passed over the helm. The residue in the body or mattrass is a brown thick substance, covered with a bitter alkaline liquid, which is to be poured off, saturated with weak sulphuric acid and boiled down with a little ivory black; the liquor is then filtered while hot; on cooling, the sulphate of quinine crystallizes, and the crystals are to be dried on filtering paper.

The brown thick substance is boiled in a small quantity of water, slightly soured with oil of vitriol, which changes a considerable portion of it into sulphate of quinine.

Two pounds of yellow bark generally yields from five to six apothecaries drams of the sulphate of quinine, in crystals of a satiny and pearly lustre.

A French surgeon at Guadaloupe, where intermittent and tropical fevers are common, has discovered that the bark of the *Adan sonia digitata* may be used instead of the sulphate of quinine, and that it is even more efficacious in fevers than the latter expensive medicine.

### A Chinese Farm House.

The farm, however small, is not so much the estate of an individual proprietor as the home of a family or seat of a clan, many generations of which under one acknowledged head or patriarch, are often congregated in the same dwelling. As the farm houses in general differ but little from each other, except in size, I will endeavor to give the reader a description of one. In a small Island formed by a moat for the supply of water, and the rearing of ducks and geese, well sheltered by bamboos and other trees, and nearly hid from view, stands the house. consisting of one floor, only, built, when possible, of stone, in other cases of brick, (of so superior a quality as to become an article of commerce and to find its way to Liverpool,) or of wood. In the centre is a large hall, called the "Hall of Ancestors," common to all the family. In it are arranged the household gods (among which are invariably the Taouist divinities presiding over hearing and sight) and relics, such as an ancestral picture, in the most conspicuous part of the wall, on each side of which is an aphorism of Confucius, and in front a table bearing incense burners and fruits, as offerings, and ornamented porcelain vases. The hall also serves for a drying room for their seeds, and a depository for the smaller implements of husbandry. It is the scene of their entertainments, many of their festivals. and the adoration of their gods, but never used for culinary purposes. This forms the nucleus of the building, around it are the dwelling rooms of the different divisions of the tribe; and as often as a marriage takes place, an apartment is added for the newly wedded couple, and, in time, the whole presents rather the appearance of a village than a single dwelling house. The furniture of each family consists of a bed, highly in many cases carved, and richly inlaid with ivory, a few high-backed chairs, often of bamboo, a plain, polished round table, washing utensils of brass, and in one corner of the room, cooking utensils, consisting of a block fire place, in which a few round pans are set with masonry, though, in the larger establishments the kitchen is a separate building. Around the rooms are several red varnished cabinets, and in these apartments the females are employed in the household duties of needle work, spinning, &c.; a spinning wheel and loom forming necessary appendages to each farm house in those parts where cotton is grown. Nearly everything for the use of the family, is home-made, agricultural implements are home-made and repaired; cotton is grown and spun, and made into clothes; silk worms are reared, and all the process of winding and weaving done by the family; flour is ground, cakes are baked, and sam shoo is distilled from rice, and as much as required stored: the rest, and whatever other produce not wanted for home consumption, is either exchanged for other necessaries amongst the neighbors, or sent to some town in the vicinity to find a market In Kiang-tsu, where that species of cloth better known under the name of nankin is made, the drapers, who are proprietors of large houses in the cities, hire stalls outside the walls, and buy their cloth, paying in bills drawn on their own houses. The live stock consists of a liberal supply of fowls, ducks, geese, goats and pigs, and a dog or two, (scarcely any family, however poor is without one or more of the latter two,) together with one or two bullocks and buffaloes, according to the labor required. The buffalo is almost an amphibious animal, being constantly in the water. The implements are very simple and primitive; almost barbarous.—*McCarthy.*

### A Head House In Borneo.

We were escorted through a crowd of wondering Dyaks, to a house in the centre of the village, which was very different in construction from the others. It was perfectly round and well ventilated, by numerous port holes in the roof, which was pointed. We ascended to the room above by means of a rough ladder, and when we entered, we were taken a-back at finding that we were in the head house, as it is called, and that the beams were lined with human heads, all hanging by a small line passed through the top of the skull. They were painted in the most fantastic and hideous manner, pieces of wood painted to imitate the eyes, were inserted into the sockets, and added not a little to their ghastly grinning appearance. The strangest part of the story, and which added very much to the effect of the scene, was, that these skulls were perpetually moving to and fro, and knocking against each other. This. I presume was occasioned by the different currents of air blowing in at the port-holes cut in the roof, but what with their continual motion, their nodding their chins when they hit each other, and their grinning teeth, they really appeared to be endowed with new life, and were a very merry set of fellows. However, whatever might be the first impression occasioned by this very unusual sight, it very soon wore off, and we amused ourselves with those motions which were "not life," as Byron says, and in the course of the day, succeeded in making a very excellent dinner, in company with these gentlemen, although we were none of us sufficiently Don Giovannis to invite our friends above to supper.—*Frank Marryatt.*

Remember that labor is necessary to excellence. This is an eternal truth, although vanity cannot be brought to believe, or indolence to heed it.—*Randolph.*

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### TO CORRESPONDENTS.

J. G. of R. I."—We have as you desired, forwarded your letter to H. J. B. C. of Washington.

" W. S of Vt "—We have answered you by mail.

" J. B. of Mass."—The improvements spoken of as having been made in England on the steam engines, so that a vessel will be able to cross the Atlantic in six days, is too good news to be true. Maudley & Field's engines are the oscillating kind, and the vessels are said to be of improved build, but it is the enormous amount of power of the engines, being no less than five hundred horse power for every seven hundred tons.

"E W. & W. S. of Ct."—We know of no braiding machine for making straw hats in operation. A machine for braiding thread, such as braces, &c., has been long known, but it would not answer for straw braiding.

" T. K. of Michigan."—We have received your letter, but we are not yet able to judge of its merits, only it must be a wonderful invention, and is certainly a great discovery as you relate. We shall be glad to see you along with it. We have had but time to read it over, and will give it more attention.

" J. T. Packard, of Mass."—Your letter was rather late in coming.

" S. T of Md."—No doubt but you are anxious to know the decision of the Patent Office, but we cannot give you any advice.

" J. L. V. of N. Y."—We cannot conceive how you make the effective pressure of steam in the cylinder the same as that in the boiler. We know the old theory, but was it correct—was it the result of fair experiment? We think not.

" R J. M. of Ohio."—Get an engraving of your machine published in the Scientific American. It will bring the invention before 11,000 subscribers and 20,000 readers.

" S. K. L. of N. Y."—Your cut will only cost $6, and be yours for the printing of bills, &c. It will be of ten times that benefit to you.

" R. Y. of Pa."—No other kind of water but the ocean is used by steamships.

" J. W. W. of Md."—Send us one dollar and we will send to you a copy of the Patent Laws for all nations, which will give you all the information you desire.

"G. W. of Ct."—Your idea relative to the petition would indeed be like a bomb-shell in the camp. It is not, however possible to tell the month of examination, as each class comes up in order, not always as placed on file with another class.

" Erratta."—In our article last week on Seidlitz Powders, for " Glauber salts," read *Rochelle salts.*

### Universal History.

No. 4 of this excellent work, published by Mr. Graham, Tribune Buildings, has just been issued from the press. It contains the history of the ancient Ethiopians and the tribes of Palestine.

### The People's Library.

This is a new work just commenced, and published by J. M. A Esty, Ogdensburg, N. Y. It is an encyclopœdia of Science and Biography, and it possesses the quality of being *multum in parvo.*

### Valuable Bridge.

The bridge between the villages of Brunswick and Topsham, Me has been rebuilt eight times within the last 42 years. The owners have kept it in good repair, and always have replaced it as speedily as possible after it has been destroyed by fire, or swept away by freshets. They have eighteen thousand dollars now invested in it, and are ready to make a reasonable disposal of their interest whenever individuals of the two towns, or public spirit brought in any way to decisive action, will purchase it for the public convenience.

### Girard College.

The Girard College is almost a failure at last. The architect has come out in a regular report against the work of his own genius, and declares that the reverberations of the recitation rooms is so deafening, that they will be useless for the purposes of their construction. The remedy proposed is to line the Gothic arches with false plain ceilings.

### New Salt Spring.

A vein of salt water, sufficient to turn an overshot mill, burst through a rock on the farm of Milton Smiley, in Cumberland county Ky., on the 26th of May. This water will produce a pint of salt to every two gallons The rock from which this stream of salt water gushes, bursted open about five years ago with a terriffic report.

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☞ All Letters, Remittances, or Communications should be addressed (post paid or franked) to

M. Y. BEACH & SONS,
jy1 tf Sun Office, New York.

### To Cotton Manufacturers.

THE Subscriber will furnish Cotton Manufacturers with his improved Cotton Willow. The fact of its being introduced into most of the best mills in New England is the best proof of its excellence. It is extremely simple in its construction and will do more and BETTER WORK with a less expenditure of power than any other Willow ; it prepares the cotton so much better than any other that there is much less power and repairs needed on the succeeding machinery. It is as safe from fire as a Card, and its form and action are such as to draw all the flyings and dirt from the journals ; it will convey the cotton to any desirable distance short of 250 feet. It can be placed in the basement of a mill or other place nearly worthless for other manufacturing purposes, and will blow the cotton into the rooms above. All necessary information given for placing and operating the machine in any peculiar or difficult situation. EDMUND BACON,

Superintendent Quinebaug Manufacturing Co.
j24 tf Norwich, Conn.

### Ballard's Improved Jack Screw.

PATENTED.

THE advantages of this Screw for Stone Quarries, Railroads, Steam Boiler Builders, and for other purposes are superior to any other similar machine.

The improvement consists in being able to use either end of the screw, as occasion requires,

It is capable of raising the heaviest Locomotive with ease, being portable, strong and powerful, and not likely to get out of order.

Many Railroad Companies and Boiler makers have them in use, by whom they are highly recommended.

JACK SCREWS,

Of various sizes, power and price, constantly on hand at the manufactory,

*No. 7 Eldridge street, near Division.*
m20 tf

**TAFT'S PREMIUM LETTER COPYING PRESS.**

THE Subscriber continues to manufacture his Premium Letter Presses, at Worcester, Mass., and respectfully informs his friends and the trade generally, that he keeps constantly on hand a large assortment, which he offers for sale at reduced prices. Orders by mail will be promptly attended to

GEO. C. TAFT,
Worcester, Mass., April 11, 1848. a22 3m

### Stave Dressing Machine.

THE undersigned are manufacturing and have now in operation, a machine for **Dressing Rived Staves,** which will dress 126 hogshead or 170 barrel staves per hour, with ONE HORSE POWER, and with TWO HORSES WILL DOUBLE THE NUMBER

It will dress CROOKED and WINDING staves to perfection, and leave the full thickness on those with thin edge, a desideratum worthy of attention.

The machine is simple, compact and durable, and has received the approval of every practical Cooper that has witnessed its operations. We warrant it to perform FULLY EQUAL to our representation and shall be pleased to exhibit it to all who may favor us with a call. For further description and terms, apply to WM. & E. T. FITCH, 2d., New Haven, Conn., or GEO. GILBERT, Westville, N. H. Co., Conn.
j3 3m*

STEAM BOILER.

BENTLEY'S Patent Tubular and other Boilers of any size, shape or power, made to order, by

SAMUEL C. HILLS & CO.
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### Tinner's Machines.

A. W. WHITNEY'S Patent Improved Tinner's Machines of every description, constantly on hand and for sale by JOHN M. BRUCE & SONS,
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### Lap welded Wrought Iron Tubes

**FOR TUBULAR BOILERS,**

From 1 1-4 to 6 inches diameter, and any length, not exceeding 17 feet.

THESE Tubes are of the same quality and manufacture as those extensively used in England, Scotland, France and Germany, for Locomotive, Marine and other Steam Engine Boilers.

THOMAS PROSSER, Patentee,
d26 28 Platt street, New York

### Johnson's Improved Shingle Machine.

THE Subscriber having received Letter Patent for an improvement in the Shingle Machine, is now ready to furnish them at short notice, and he would request all those who want a good machine for sawing shingles, to call on him and examine the improvements he has made, as one eighth more shingles can be sawed in the same given time than by any other machine now in use.

Augusta, Maine, Oct. 1, 1847. J. G. JOHNSON.

### GENERAL PATENT AGENCY.

REMOVED.

THE SUBSCRIBER has removed his Patent Agency from 189 Water to 43 Fulton street.

The object of this Agency is to enable Inventors to realize something for their inventions, either by the sale of Patent Goods or Patent Rights.

Charges moderate, and no charge will be made until the inventor realizes something from his invention.

Letters Patent will be secured upon moderate terms. Applications can be made to the undersigned, personally or by letter post paid.

m8 SAMUEL C. HILLS, Patent Agent.

### A. W. Whitney,

Manufacturer of Machines for Working

TIN AND SHEET IRON,

On a new and improved Plan.

Also, makes to order Engine and other Lathes of improved construction. ☞ All order by mail, or otherwise, will meet with prompt attention by addressing A. W. WHITNEY.

Woodstock, Vt., April 17, 1848. a22 3m*

☞ The above is prepared to execute all orders at the shortest notice and on the most reasonable terms.

### To Mill Owners.

HAVILAND & TUTTLE'S Patent Centre Vent Pressure Water Wheel.—These wheels are now in successful operation in many towns in Maine, Massachusetts, and Rhode Island, and are found to surpass in power and facility of adaptation any water wheel now in use. This wheel was awarded the silver medal at the Fair of the American Institute recently held in New York and a diploma at the Mechanics' Fair in Boston.

The wheels are manufactured and for sale by the FULTON IRON FOUNDRY CO., South Boston, Mass.,—where the wheels can be seen and any information cencerning them had.

Patent Rights for different States, Counties, &c. for sale, as above. m25 6m*

### Machinery.

PERSONS residing in any part of the United States who are in want of Machines Engines, Lathes, OR ANY DESCRIPTION OF MACHINERY, can have their orders promptly executed by addressing the Publishers of this paper. From an extensive acquaintance among the principal machinists and a long acquaintance in mechanical matters they have uncommon facilities for the selection of the best machinery and will faithfully attend to any business entrusted to their care. MUNN & CO. a15

### SPRING STYLE HATS.

I AM now prepared to offer my old and new customers—for Gentlemen and Youth—for Spring and Summer, at wholesale and retail, a very extensive assortment of Hats and Caps—at prices which cannot fail to suit the most economical and prudent purchaser. Store and Chambers—173 Washington street, Boston. W. M. SHUTE. m20 7t*

### Important to the Public.

IT must not only be important, but interesting to the public to know at what establishment in New York Hats or Caps of the best quality and latest style can be purchased at the cheapest price The place is Knox's, where may be found every variety of a Hat from a shilling Palm Leaf to a Five Dollar Beaver, or a Cap from a two shilling oil cloth to a beautiful new style cloth for $1.50.

Knox's is THE place—128 Fulton street. m20 3m

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**Important to Builders and others.**

THESE Hinges are for opening, closing, locking and completely regulating the blind upon the interior of the house without raising the sash. They are adapted to any kind of house, or style of finish All communications, whether for the purchase of the article, or of Town, County or State rights, addressed to the subscriber, or to J. W. Ingell & Co., Taunton, Mass., will be promptly and satisfactorily attended to.

j3tf L T. TALBOT, Taunton, Mass.

PREMIUM SLIDE LATHE.

THE subscriber is constantly building his improved Lathes of all sizes, from 7 to 30 feet long, and can execute orders at short notice.

JAMES T. PERKINS,
Hudson Machine Shop and Iron Works
m11 Hudson, N. Y.

### Johnson & Robbins,

**Consulting Engineers and Counsellors for Patentees.**

Office on F street, opposite Patent Office, Washington, D. C. j17 tf

### Agricultural Implements.

☞ Inventors and Manufacturers of superior Agricultural Impiements may find customers for their goods by applying at the Agricultural Warehouse of S. C. HILLS & CO. 43 Fulton st. m8

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For the Scientific American.

**More about Cameos.**

The ancients formed cameos by engraving figures, in low relief, on different kinds of silicious stones, generally selecting for their purpose those which had layers of different colors; so that the figures, or the different parts of the same figures, were of divers colors. Such cameos were made in southern Europe, and also in France, where this art has lately attempted to be revived; but the hardness of the materials requires so much labor to be employed that the fabrication is too expensive to come into general use. Many attempts have been made to introduce substitutes for the ancient cameos, such as different kinds of porcelain and glass. Their great inferiority, however, caused them to be neglected, and the best and now most usual substitutes are the shells of molluscuous animals; several kinds of which afford the necessary varieties of color, and are at the same time sufficiently soft to be worked on with ease, and hard enough to resist wear and to last for a long period of time. It was formerly the custom, especially in Holland, to use for this purpose the pearly nautilus, and several kinds of turbines or wreath shells, which have an opaque white external coat over an internal pearly one. These have now almost entirely gone out of fashion, and are rarely to be met with, except in the cabinets of the curious.—The shells now used are those of the Flesh-eating Univalve which are peculiar, all being formed of three layers of calcarous matter, each layer being composed of three perpendicular laminæ, placed side by side; the laminæ composing the central layer being placed at right angles with one of the inner and outer ones; the inner and outer being placed longitudinally with regard to the axis of the line of the shells, while the inner laminæ are placed across the axis, and concentrically with the edge of the mouth of the shell. This structure furnishes the cameo cutter with the means of giving a particular surface to his work; for a good workman always carefully puts his work on the shell in such a manner that the direction of the laminæ of the central coat is longitudinal to the axis of the figure, In cameos the central layer forms the body of the bas relief, the inner laminaæ being the ground, and the outer one the third or superficial color, which is sometimes used to give a varied appearance to the surface of the figures. The cameo cutter selects for his purpose, first, the shells of this kind which have the three coats or layers composed of different colors, as these afford him the means of relieving his work; and, secondly, those which have the three layers strongly adherent together; for if they separate his labor would be lost. The kinds now employed, and which experience has taught them are best for their purpose, are—the bull's mouth, which has a red inner coat, or what is called a sardonyx ground; the black helmet, which has a black inner ground, or what is called an onyx ground. The red color of the bull's mouth extends only a slight distance in the mouth of the shell, becoming paler as it proceeds backwards, as may be observed by the pale side which is generally to be observed in each red grounded cameo. The dark color extends further in the black and yellow kind; hence the bull's mouth affords only a single cameo large enough to make brooches, and several small pieces for short studs; and the black helmet yields on an average about five brooches and several pieces for studs.

The manufacture of shell cameos has been carried on in Rome for upwards of forty years; it was confined to Italy until the last twenty years, at which period an Italian commenced the making of them in Paris. Little progress was, however, made until the last ten or twelve years; but, at the present time, a much greater number are made in Paris than in Italy. About three hundred persons are now employed in Paris in this branch of trade earning wages which vary from three to twenty five francs a day, according to their talent and skill. Thirty years ago, a very few cameos were made from any but black helmet, and the number of shells then used amounted to about three hundred annually, nearly the whole of which were sent from England, being all that were then imported. To show the rapid increase of this trade, the number used in France last year was 100,500 shells of all kinds. Of the bull's mouth half are received from the island of Bourbon, to which place they are brought from Madagascar; and the other half are the produce of the island of Ceylon, part of which are received from the English dealers, and some via Calcutta, are imported direc to Havre; hence, though originally from Ceylon, they are called by the French cameo cutters, "Calcutta shells;" no shell of the kind, is, however, found in the fresh water rivers of that city. The black helmets are supplied entirely from England, being the produce of Jamaica, and New Providence. They are not found in Madagascar, though naturalists have for a long period called them the Madagascar helmet, by which name they are known to the cutters. The average value of the larger cameos made in Paris will be about five francs each.

For the Scientific American.

**Yellow Color.**

This is a color which our country people frequently dye their flannels. It is a color that washes very well and is the easiest dyed in the whole scale. It is one of the primary colors—there being only three of them, viz. red, blue and yellow. Sir Isaac Newton's theory placed seven colors in the primary scale, but this is now known to be incorrect.

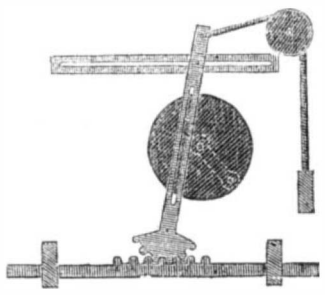
To dye flannel yellow, a quantity of quercitron bark, which will be found at any druggist's, is scalded in a clean vessel. The clear liquor is then put into the dye kettle, when a teacup full of the sulpha muriate of tin is added and the flannel entered loosely while the liquor is boiling. About three pounds of the quercitron bark will make a very dark yellow for ten pounds of flannel, or coarse woolen yarn. It is best to give the stuff or bark liquor, at three different times, taking the goods out after 20 minutes boiling and airing them well, when they are again to be entered with a little fresh liquor, and when dark enough washed and dried. This bark will not impart its color without boiling, but the same process will dye cotton. Silk never should be boiled for dyeing any color. This bark was discovered as a dye drug by Bancroft, and was a source of great profit to America at one period, but the bichromate of potass has superseded it for many purposes, and in many colors not for the better, we think. Bancroft recommended the use of quercitron in the dyeing of scarlet wool, and he advocated the uselessness of tartar where the bark was used. In this respect, that great chemist was incorrect.

SALMON.

On white woolen goods, such as flannels and such like fabrics, a good salmon color, or orange, may be dyed with equal quantities of cochineal and quercitron bark dyed as described in the foregoing, only a little cream of tartar should be added along with the spirits (muriate of tin.) The orange is just a salmon in excess of color, only inclining to the yellow shade, therefore a greater quantity of the same stuffs that can dye a salmon color, will produce an orange. For a salmon color, it is positively necessary to have a clear white ground. There are other ways of dyeing yellow, salmon and orange colors, but no stuffs like those in this receipt can equal the color which they make either in richness or permanency. We speak of the salmon and orange only for woolen goods. The cochineal will not by the process described impart any color to cotton. By following the above, having the goods perfectly clean, no person need be afraid of not dyeing the color, we warrant that. Cochineal is more than two dollars per pound, but an ounce ground up fine, will dye a good scarlet on one pound of wool, that is the best cochineal. Fine goods require less stuff than coarse; the reason of this would be unprofitable to many to explain, the practical is only set forth, and then the operator can reflect from experience—a snuff of cochineal will dye a salmon on a pound of wool.

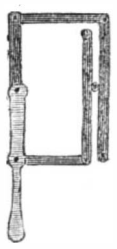
**MECHANICAL MOVEMENTS.**

**Double Traverse Motion.**



This cut represents a combination to produce two different amounts of traverse motion from the circular motion of the wheel. The larger traverse is produced at the bar above, and the less at the horizontal bar beneath. It will be observed that the bar or rocking shaft with a quadrant rack base, has a slot extending upwards for the purpose of a steadying pin to keep its motion regular during its vibrations. The crank knob on the wheel vibrates the upright shaft and when it is moved in one direction the weight is drawn over the pulley upwards, which weight acts like a spring and draws the shaft in the other direction. The horizontal bar beneath would have no traverse motion at all only for the quadrant rack which by gathering tooth after tooth, verse and reverse, gives a short traverse to the bar.

**Crooked Levers.**



This is just a series of levers to which connecting rods may be attached and whereby the spring of the lever is regulated in the same manner as the tip of a trip hammer—A friction roller is placed between the two levers for the purpose of giving as it were a double spring to the active one

**Gems Altered by Art.**

Lapidaries are accustomed to improve and change the colors of gems by exposing them to heat, and other chemical agents.

In India, yellow cornelians are put into an earthen pot, covered with dry goats' dung, and heated for twelve hours, by which they are changed into a fine red. Instead of goats dung, sand may be used.

Black rock crystal is rendered colorless by heat, if continued for some hours, otherwise it will be only yellow.

Bucquet made a chemical distinction between rock crystal and quartz; the latter cracking by heat, probably on account of containing water.

The amethyst by a moderate heat becomes colorless; but if the heat is violent, white and shotten like an opal; it is more liable to crack than rock crystal.

Beryl is changed by a moderate heat to a light blue, if the heat is greater, it becomes like mother of pearl.

The emerald acquires the same pearly lustre by heat.

The color of the chrysoberyl is not altered by heat.

Blue flour spar is changed to red, and if the heat is strong, is often rendered colorless.

Agates absorb oil, either by being immersed or boiled in it for a sufficient time, or even during the process of cutting them, and on boiling them in oil of vitriol, the parts which have absorbed the oil are rendered black, while the other parts retain their natural color, or even become whiter than they were before.

Agates and cornelians having carbonate of soda applied to them, and then applied to the heat of a furnace under a muffle, an opake white enamel is thus made to cover the stone which cannot easily be distinguished from a natural white flake. By this means are produced the cornelian beads brought from India, which are ornamented with a net work of a white color, penetrating to a small depth, and equally as hard as the stone itself.

For the Scientific American.

**To Paint the Sliders of Magic Lanterns.**

Provide a small muller and a piece of thick ground glass five or six inches square to grind the colors on, also a small pallet knife and a few bottles to put the colors in. For a red color get a little scarlet lake, and for blue a little Prussian blue. For green use purified verdigris ground with a quarter of its bulk of gamboge, and for brown use burnt umber, and for black, burnt sienna black. These are the only colors that are truly transparent and fit for painting sliders. Having all these colors ready, grind them in the balsam of fir mixed with half its bulk of turpentine; mastic varnish will do very well, but the balsam is the most beautiful. To paint the glass black round the painting, dissolve asphaltum in turpentine and mix with lampblack. When the colors are all ground they must be put in separate bottles and sealed, and when they are to be used, a little bit is taken out at once on a piece of glass, just as much as is needed at once, as it quickly dries. If the color is too thick it must be diluted with turpentine. To paint the sliders, the subject must be designed on paper and the paper put under the glass and the glass painted above it according to the design on the paper underneath.

**Cure for Lockjaw.**

A correspondent of the Baltimore Sun says that when any one runs a nail or any sharp iron in any part of their frame, take a common smoke pipe, fill it with tobacco, light it well, then take a thin cloth or silk handkerchief, place it over the bowl of the pipe and blow the smoke through the stem into the wound—hold the stem close, to carry the hot smoke into the wound. Two or three pipesfull will be sufficient to set the wound discharging. He has tried it on himself and five others, and found it to give immediate relief. If the wound has been some days standing it will open it again, if the tobacco is good.

**Gold in the Violet.**

Mr. R. Hunt, of the Royal Institution, London, states that a friend of his has succeeded in obtaining a minute though weighable portion of gold, from a quantity of the petals of the blue violet.—*Ex.*

Mr. Hunt's friend was undoubtedly mistaken, or else gold is not a simple substance.

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